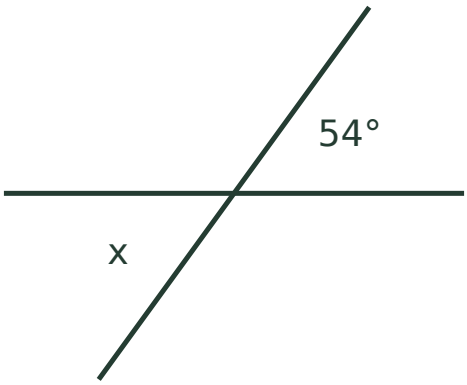
Vertically opposite angles

6 questions | 11 marks

Equivalent correct methods earn the corresponding marks.

1. Find x in the crossing shown. [1 mark]



Two intersecting straight lines

x is vertically opposite the 54° angle, so $x = 54^\circ$.

Answer: 54°

2. Two lines cross. One angle is 105°. Find an adjacent angle. [1 mark]

$180^\circ - 105^\circ = 75^\circ$.

Answer: 75°

3. At a crossing one angle is 38°. List all four angles in order around the point. [2 marks]

An adjacent angle is $180^\circ - 38^\circ = 142^\circ$.

Opposite pairs are equal.

Answer: 38°, 142°, 38°, 142° (starting at the given angle)

4. One angle at a crossing is 90°. What are the other three? Explain. [2 marks]

The opposite angle equals 90°.

Each neighbour is $180^\circ - 90^\circ = 90^\circ$.

Answer: All are 90°.

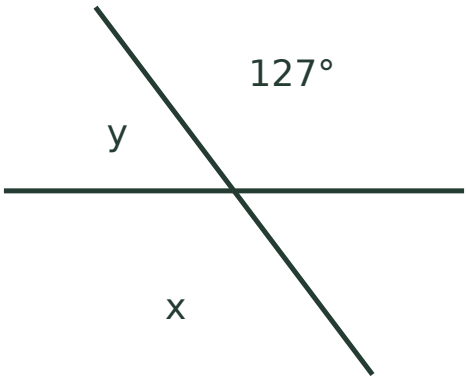
5. A crossing has adjacent angles marked 112° and 112°. Could both marks be correct? Explain. [2 marks]

Adjacent angles on the two straight lines must total 180°.

$112^\circ + 112^\circ = 224^\circ$, not 180°.

Answer: No.

6. At an intersection, x is opposite 127° and y is next to 127°. Find x and y, giving a reason for each. [3 marks]



Two intersecting straight lines

x is vertically opposite 127°, so they are equal.

y forms a straight angle with 127°, so $y = 180^\circ - 127^\circ = 53^\circ$.

Answer: $x = 127^\circ;\ y = 53^\circ$